*CLAIM AMENDMENTS*

1.    (Original)  A method of bi-directionally communicating between an application residing on a first processor on a private computer network and an application residing on a second processor not on the private computer network, the communication path including a public computer network and a proxy server coupled to the private computer network and separating the private computer network from the public computer network, the method comprising:

establishing a first communication channel between the first processor and the second processor through the proxy server to allow the transfer of first messages from the first processor to the second processor, and the delivery of first message delivery acknowledgments from the second processor to the first processor; and

establishing a second communication channel between the first processor and the second processor through the proxy server to allow the transfer of second messages from the second processor to the first processor, and the delivery of second message delivery acknowledgments from the first processor to the second processor.

2.    (Original)  The method of claim 1, wherein the establishing of a first communication channel comprises transmitting a first HTTP-based "request" to the second processor via the proxy server, the first "request" including at least one of the first messages therein.

3.    (Original)  The method of claim 1, wherein the establishing of a second communication channel comprises transmitting a second HTTP-based "request" to the second processor via the proxy server to be parked at the second processor, the second "request" establishing a persistent HTTP connection between the first processor and the second processor through the proxy server.

4.      (Original)  The method of claim 3, further comprising receiving an HTTP-based "reply" from the second processor on the second communication channel, the HTTP-based "reply" including at least one of the second messages therein.

5.      (Original)  The method of claim 4, further comprising transmitting a third HTTP-based "request" to the second processor via the proxy server in response to receiving the HTTP-based "reply", the third HTTP-based "request" containing an acknowledgment for the HTTP-based "reply" and further establishing a persistent HTTP connection between the first processor and the second processor through the proxy server.

6.      (Original)  The method of claim 3, wherein the first processor only receives an HTTP-based "reply" from the second processor on the second communication channel when the second processor has at least one of the second messages to send to the first processor.

7.      (Original)  The method of claim 3, wherein the second HTTP-based "request" includes therein a request that the second processor transmit a reply after the expiration of a time period even if there are no second messages so that the first processor can assess a status of the connection thereto.

8.      (Original)  The method of claim 7, further comprising setting the time period to be less than two days.

9.      (Original)  The method of claim 7, further comprising setting the time period to be approximately five minutes.

10.     (Original)  The method of claim 7, further comprising dynamically adjusting the time period based upon a connection time out closure controlled by the proxy server.

11.    (Original)  The method of claim 10, wherein the dynamically adjusting of the time period comprises:

receiving a connection time out closure message from the proxy server;

determining a first time between transmitting the second HTTP-based "request" and receiving a connection time out closure message from the proxy server; and

calculating a new time period to be less than the first time and less than the time period.

12.    (Original)  A computer-readable medium having computer-readable instructions for performing the method of claim 1.

13.    (Original)  A method of enabling transmission of unsolicited messages from a server to a client, the client residing on a private computer network having a proxy server between the private computer network and a public computer network, the server transmitting the unsolicited messages over the public computer network, the method comprising transmitting an HTTP-based request to the server via the proxy server to open a persistent connection therewith, the HTTP-based request requesting a reply from the server only when the server has messages to send to the client.

14.    (Original)  The method of claim 13, further comprising selecting a connection time out period, and including the connection time out period in the HTTP-based request so that the HTTP-based request further requests a reply from the server after the expiration of the connection time out period even if there are no messages to send to the client.

15.    (Original)  The method of claim 14, further comprising dynamically adjusting the connection time out period to avoid connection termination by the proxy server due to communication inactivity.

16.     (Original) The method of claim 15, wherein the step of dynamically adjusting the connection time out period comprises:

receiving a connection time out closure message from the proxy server;

calculating a new time period from the transmitting of the HTTP-based request to the receiving of the connection time out closure message; and

reducing the connection time out period to be less than the new time period and less than a current value of the connection time out period.

17.     (Original) The method of claim 13, further comprising:

receiving a connection time out closure message from the proxy server indicating that the proxy server has closed the persistent connection;

calculating a connection time out period from the transmitting of the HTTP-based request to the receiving of the connection time out closure message; and

transmitting a second HTTP-based request to the server via the proxy server to open a persistent connection therewith, the second HTTP-based request requesting a reply from the server when the server has messages to send to the client and after the expiration of the connection time out period if there are no messages to send to the client.

18.     (Original) The method of claim 17, further comprising:

receiving a second connection time out closure message from the proxy server;

reducing the connection time out period to form a new connection time out period shorter in duration than the connection time out period; and

transmitting a third HTTP-based request to the server via the proxy server to open a persistent connection therewith, the third HTTP-based request requesting a reply from the server when the server has messages to send to the client and after the expiration of the new connection time out period if there are no messages to send to the client.

19.     (Original) A computer-readable medium having computer-readable instructions for performing the method of claim 13.

20.    (Original)  A method of transmitting unsolicited HTTP-based messages via a public computer network to a client residing on a private computer network, the private computer network including a proxy server, the method comprising:

receiving an HTTP-based request originating from the client through the proxy server; and

parking the HTTP-based request without responding thereto unless a message is generated that needs to be transmitted to the client; and

when the message is generated

generating an HTTP-based reply to the HTTP-based request parked for the client, the HTTP-based reply containing the message therein; and

transmitting the HTTP-based reply.


21.    (Original)  The method of claim 20, further comprising:

receiving a second HTTP-based request containing a message acknowledgment from the client through the proxy server;

parking the second HTTP-based request.


22.    (Original)  The method of claim 20, wherein the HTTP-based request includes connection time out period information, and wherein the step of parking the HTTP-based request further comprises:

parking the HTTP-based request without responding thereto until the expiration of the connection time out period; and

when the connection time out period expires

generating an HTTP-based reply to the HTTP-based request parked for the client, and

transmitting the HTTP-based reply.

23.    (Original)  A computer-readable medium having computer-executable instructions for performing the method of claim 20.